

11-04-05

Ifw

PTO/SB/24 (09-04)

Approved for use through 7/31/2006

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b>		Application Number	10/606,924
		Filing Date	June 26, 2003
		First Named Inventor	P. van Rooyen
		Art Unit	2637
		Examiner Name	S.K. Ahn
		Attorney Docket Number	16100US02
Total Number of Pages in This Submission		6	

**ENCLOSURES (check all that apply)**

<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Supplemental Information Disclosure Statement – 2 pages <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Return-Receipt Postcard <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Please see Remarks below
Remarks		PTO Form SB/08A copies of 17 non-patent literature documents

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm	McAndrews Held & Malloy, Ltd.
Signature	<i>Michael T. Cruz</i>
Printed Name	Michael T. Cruz
Date	November 3, 2005

**VIA EXPRESS MAIL**

Label No.: EV 639 811 978 US    Date: November 3, 2005			
Name (Print/type)	Michael T. Cruz	Registration No. (Attorney/Agent)	44,636
Signature	<i>Michael T. Cruz</i>	Date	November 3, 2005

NOV 03 2003  
 PATENT & TRADEMARK OFFICE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Effective on 12/08/2004.  
 Fees pursuant to the consolidated Appropriates Act, 2005 (H.R. 4818).

# FEE TRANSMITTAL

## for FY 2005

Complete If Known

Application Number	10/606,924
Filing Date	June 26, 2003
First Named Inventor	P. van Rooyen
Examiner Name	S.K. Ahn
Art Unit	2637
Attorney Docket No.	16100US02

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) **180.00**

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_

☒ Deposit Account Deposit Account Number: 13-0017 Deposit Account Name: McAndrews Held & Malloy

For the above-identified deposit account, the Director is hereby authorized to (check all that apply)

☒ Charge Fee(s) indicated below ☐ Charge Fee(s) indicated below, except for the filing fee  
☒ Charge any additional fee(s) or underpayments of fees(s) ☒ Credit any overpayments  
 under 37 CFR 1.16 and 1.17

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid(\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20, or for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple dependent claims	360	180

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee	Fee Paid (\$)
-20 or HP	x	=				
HP = highest number of total claims paid for, if greater than 20						
Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)			
-3 or HP	x	=				
HP = highest number of independent claims paid for, if greater than 3						

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
-100	/50	(round up to a whole number)	x	=

4. OTHER FEE(S)

	Fee Paid (\$)
Non-English Specification, \$130 fee (no small entity discount)	
Other: Information Disclosure Statement filing fee	180

SUBMITTED BY

Signature	<u>Michael T. Cruz</u>	Registration No. (Attorney/Agent)	44,636	Telephone	(312)775-8000
Name (print/type)	Michael T. Cruz			Date	November 3, 2005



2 F

Attorney Docket No. 16100US02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In the Application of:

P. van Rooyen, et al.

Serial No.: 10/606,924

Filed: June 26, 2003

For: METHOD AND APPARATUS FOR  
SPACE-TIME TURBO-CODED  
MODULATION

Examiner: S.K. Ahn

Group Art Unit: 2637

) EXPRESS MAIL

)

) Label No.: EV 639 811 978 US

)

) Date: November 3, 2005

)

)

)

)

)

)

)

)

)

)

)

)

)

SUPPLEMENTAL  
INFORMATION DISCLOSURE STATEMENT

Mail Stop: Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

I. ENCLOSURES

Enclosed are the following:

- \* a completed PTO Form SB 08A which comprises two pages, and
- \* except where such requirement has been waived by the U.S. Patent and Trademark Office, a copy of each printed document or patent document listed in the enclosed PTO Form SB 08A and not previously provided to or by the PTO in this application, have been enclosed herewith (constituting a total of 17 documents).

11/07/2005 LWONDIH1 00000003 130017 10606924

01 FC:1806 180.00 DA

II. FEE DETERMINATION

A fee is believed to be due.

III. FEE PAYMENT

- \* In compliance with 37 C.F.R. § 1.97(c)(2), Applicant respectfully submits the fee as set forth in 37 C.F.R. § 1.17(p) in the amount of \$180.00.

The following arrangements have been made to pay the fees calculated above:

The Commissioner is hereby authorized to charge the fee of \$180.00 to the deposit account of McAndrews, Held & Malloy, Account No. 13-0017, and additional fees, or to credit overpayments to the same deposit account, if necessary.

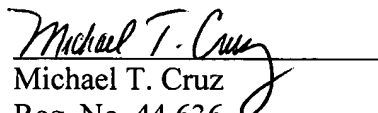
IV. REQUEST FOR CONSIDERATION

The filing of a supplemental information disclosure statement shall not be construed to be an admission that the information cited in the statement is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

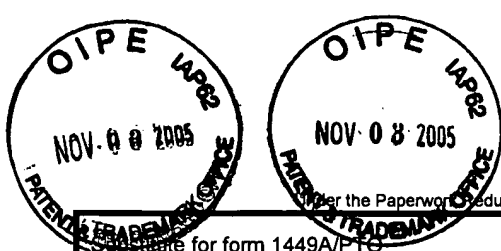
It is respectfully requested that this paper and enclosures be considered by the Examiner. Furthermore, the Examiner is respectfully requested to initial a copy of PTO Form SB 08A and to return a copy to Applicants to indicate consideration of the enclosed listed documents.

Date: November 3, 2005

Respectfully submitted,

  
Michael T. Cruz  
Reg. No. 44,636  
Attorney for Applicants

McAndrews, Held & Malloy, Ltd.  
500 West Madison Street, 34th Floor  
Chicago, Illinois 60661  
Telephone: (312) 775-8084  
Facsimile: (312) 775-8100



PTO/SB/08A (08-03)  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Use this form for form 1449A/PTO

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				<b>Application Number</b>	10/606,924
				<b>Filing Date</b>	June 26, 2003
				<b>First Named Inventor</b>	P. van Rooyen
				<b>Group Art Unit</b>	2637
				<b>Examiner Name</b>	S.K. Ahn
				<b>Attorney Docket Number</b>	16100US02
Sheet	1	of	2		

### U.S. PATENT DOCUMENTS

Examiner Initial*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1				
	A2				
	A3				
	A4				
	A5				
	A6				
	A7				
	A8				
	A9				
	A10				
	A11				
	A12				

### FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
	A13					
	A14					
	A15					
	A16					
	A17					

### OTHER ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	A18	D.J. van Wyk et al., "On the Construction of Layered Space-Time Coded Modulation STCM Codes Employing MTCM Code Design Techniques," IEEE VTC '99: Vehicular Technology Conference (Amsterdam, the Netherlands), September 1999, pgs. 2969-2973
	A19	P. van Rooyen et al., <u>Space-Time Processing for CDMA Mobile Communications</u> , Kluwer Academic Publishers, 2000
	A20	D. J. van wyk, "Four-dimensional Q <sub>2</sub> PSK modulation and coding for mobile digital communication," Master's thesis, University of Pretoria, South Africa, April 1996

EXAMINER SIGNATURE	DATE CONSIDERED
-----------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard St. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450 Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. Send TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1800-786-9199) and select option 2.

Rev. Sept. 03

X:\OPEN\MTC\Broadcom\ZYRAY\16100US02 (RONI 012 01US)\2005.11.03 Supp Information Disclosure Statement\16100US02 Supp SB 08.doc

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/606,924
				Filing Date	June 26, 2003
				First Named Inventor	P. van Rooyen
				Group Art Unit	2637
				Examiner Name	S.K. Ahn
				Attorney Docket Number	16100US02
Sheet	2	Of	2		

OTHER ART -- NON PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	A21	J.E. Cilliers, et al., "A synchronous Q <sup>2</sup> PSK DS-CDMA system: System conceptualism, implementation and performance analysis," in Proceedings of ISSSTA '98, (Sun City, South Africa), September 1998, pgs. 4-8
	A22	G. Ungerboeck, "Channel coding with Multilevel/Phase signals," IEEE Transactions on Information Theory, vol. IT-28, January 1982, pgs. 55-67
	A23	G. Ungerboeck, "Trellis-Coded Modulation with redundant signal sets - Part 1: Introduction," IEEE Communications, vol. 25, February 1987, pgs. 5-11
	A24	G. Ungerboeck, "Trellis-Coded Modulation with redundant signal sets - Part II: State of the art," IEEE Communications Magazine, vol. 25, February 1987, pgs. 12-21
	A25	G. D. Boudreau, et al., "A comparison of trellis coded versus convolutionally coded spread-spectrum multiple-access systems," IEEE Journal on Selected Areas of Communication, vol. 8, May 1990, pgs. 628-640
	A26	D. Divsalar et al., "The design of Trellis Coded MPSK for fading channels: Performance Criteria," IEEE Transactions on Communications, vol. 36, September 1988, pgs. 1004-1012
	A27	D. Divsalar et al., "The design of Trellis Coded MPSK for fading channels: Set Partitioning for optimum code design," IEEE Transactions on Communications, vol. 36, September 1988, pgs. 1013-1021
	A28	V. Tarokh, et al., "Space-time codes for high data rate wireless communication: Performance criterion and code construction," IEEE Transactions on Information Theory, vol. 44, March 1998, pgs. 744-765
	A29	E. Biglieri, et al., <u>Introduction to Trellis-Coded Modulation with Applications</u> , Macmillan, 548 pgs., 1991
	A30	D. J. van Wyk, et al., "A multiple trellis coded Q <sup>2</sup> PSK system for wireless local loop applications," in PIMRC'97: International Symposium on Personal Indoor and Mobile Radio Communications, (Helsinki, Finland), September 1997, pgs. 624-628
	A31	P. Robertson, "Coded modulation scheme employing turbo codes," Electronics Letters, vol. 31, no. 18, 1995, pgs. 1546-1547
	A32	P. Robertson et al., "A novel bandwidth efficient coding scheme employing turbo codes," in ICC'96: International Conference on Communications (Dallas, Texas, USA), June 1996, pgs. 962-967
	A33	D. Divsalar et al., "Multiple Trellis Coded Modulation (MTCM)," IEEE Transactions on Communications, vol. 36, April 1988, pgs. 410-419
	A34	Universal Mobile Telecommunications System (UMTS); Multiplexing and channel coding (FDD) (3GPP TS 25.212 version 3.5.0 Release 1999); ETSI TS 125 212 V3.5.0 (2000-12)

EXAMINER	DATE CONSIDERED
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard St. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.